

Stress resilience in virtual environments: training combat relevant emotional coping skills using virtual reality

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ABSTRACT

The incidence of posttraumatic stress disorder (PTSD) in returning OEF/OIF military personnel has created a significant behavioral healthcare challenge. This has served to motivate research on how to better develop and disseminate evidence-based treatments for PTSD. One emerging form of treatment for combat-related PTSD that has shown promise involves the delivery of exposure therapy using immersive Virtual Reality (VR). Initial outcomes from open clinical trials have been positive and fully randomized controlled trials are currently in progress to further investigate the efficacy of this approach. Inspired by the initial success of this research using VR to emotionally engage and successfully treat persons undergoing exposure therapy for PTSD, our group has begun developing a similar VR-based approach to deliver stress resilience training with military service members prior to their initial deployment. The STress Resilience In Virtual Environments (STRIVE) project aims to create a set of combat simulations (derived from our existing Virtual Iraq/Afghanistan PTSD exposure therapy system) that are part of a multi-episode interactive narrative experience. Users can be immersed within challenging combat contexts and interact with virtual characters within these episodes as part of an experiential learning approach for delivering psychoeducational material, stress management techniques and cognitive-behavioral emotional coping strategies believed to enhance stress resilience. The STRIVE project aims to present this approach to service members prior to deployment as part of a program designed to better prepare military personnel for the types of emotional challenges that are inherent in the combat environment. During these virtual training experiences users are monitored physiologically as part of a larger investigation into the biomarkers of the stress response. One such construct, Allostatic Load, is being directly investigated via physiological and neuro-hormonal analysis from specimen collections taken immediately before and after engagement in the STRIVE virtual experience. This paper describes the development and evaluation of the Virtual Iraq/Afghanistan Exposure Therapy system and then details its current transition into the STRIVE tool for pre-deployment stress resilience training. We hypothesize that VR stress resilience training with service members in this format will better prepare them for the emotional stress of a combat deployment and could subsequently reduce the later incidence of PTSD and other psychosocial health conditions.

Full papers will be published in the Conference Proceedings and will be available to delegates at the conference on Sept. 10.

Full papers will be released on-line in the ICDVRAT archive on March 15.